

**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT NO. 1000443**

I. INTRODUCTION

This Title V permit is for the operation of a secondary paper mill which is located in Flagstaff, Arizona. The applicant is Georgia-Pacific Tissue, LLC. The facility was purchased by Georgia-Pacific Tissue in December 1999, from Wisconsin Tissue Mills, Inc.

At the paper mill, various grades of recycled waste paper are used as raw materials to a pulping, deinking and bleaching process. The material is then fed to one of two paper machines, dried, and then rolled for delivery to a conversion facility. Also present at the facility are two air cap hoods, fired with two natural gas or propane burners, and a Cleaver Brooks boiler, also fired with natural gas.

A. Company Information

Facility Name:	Georgia-Pacific Tissue, LLC
Mailing Address:	1600 E. Butler Avenue, Flagstaff Arizona 86001
Facility Address:	1600 E. Butler Avenue, Flagstaff Arizona 86001
Responsible Official:	Mike Bogenschutz, General Manager, Western Operations

B. Attainment Classification (Source: 40 CFR §81.303)

This source is located in an attainment area for all pollutants.

II. PROCESS DESCRIPTION

The source industrial classification code for the Georgia Pacific Tissue facility is 2621. At the facility, recycled office waste paper, food carton box trimmings, food carton box stock, and other grades of waste paper are used as raw materials. The raw material is referred to as furnish. The furnish is repulped (water is added to the furnish and materials are vigorously blended and beaten); screened and cleaned to remove waxes, dirt, and sand; and deinked and bleached with sodium hypochlorite and sodium hydrosulfite to remove printing inks prior to the manufacture of finished recycled tissue at various weights.

Deinked pulp is sent to either of two paper machines located at the facility. The deinked pulp is delivered to each paper machine where it is dewatered gravitationally and mechanically. The dewatering process occurs by applying a vacuum prior to mechanically pressing water out of the paper sheet. On #5 Paper Machine, drying consists of a Yankee Dryer with an integral air cap heater followed by six after dryers. On #6 Paper Machine, drying consists of a Yankee Dryer with two integral air cap heaters.

Georgia Pacific Tissue operates one Cleaver Brooks boiler and three air cap burners. These units operate on natural gas and are equipped to use propane. The purpose of the boiler is to produce steam for the Yankee dryers and to heat the facility. The purpose of the air cap burners is to dry the processed tissue paper. Table 2-1 describes the maximum processing and production rates for the facility.

Table 2-1: Maximum Processing and Production Rates

Product	Maximum Production
Stock Processing Rate (assume 25% losses)	83200 tons per year (tpy)
	9.5 tons per hour (tph)
Finished Tissue Production Rate (assume 25% losses)	62,200 ton per year (tpy)
	7.1 tons per hour (tph)

The following process descriptions are excerpted from Georgia-Pacific Tissue's permit application submitted in July, 1996, and revised in September 1998 and January 1999.

A. Fiber Prep Operations

Fiber Prep operations consist of wastepaper receiving, pulping and bleaching (or deinking), screening and cleaning, floating, and washing/bleaching. In the pulping process, the wastepaper is mixed with water and steam such that the paper fiber can be separated and dispersed from certain unwanted substances such as dyes and inks. This separation occurs during the deinking operation. The cleaned fiber is stored in a chest before being sent to the paper machines for paper production.

In both the pulping and deinking processes, sodium hypochlorite and sodium hydrosulfite are added to help strip colors from the wastepaper. A deinking chemical is also added to the pulper to aid in the removal of certain substances such as dyes and inks in the deinking process.

Emissions and Air Pollution Control Devices

The emissions from this process consist of the volatile organic compound (VOC) content of the process chemicals and the fiber from processing the wastepaper. Small amounts of sulfur dioxide is emitted from the use of sodium hydrosulfite. Several organic hazardous air pollutants are emitted from processing the wastepaper. Also, some chloroform is emitted from the use of sodium hypochlorite. The Number 1 and 2 pulpers each have a powered stack, the other fiber prep operation emissions are reasonably presumed to be vented from various powered and unpowered exhausts in the fiber prep area. There are no air pollution control devices for this area.

B. Paper Mill

The paper mill operation consists of two paper making machines supported by winding and wrapping operations. In the paper making process, the deinked pulp which is carried by a large amount of water, is applied to a forming wire where the sheet is formed and bulk dewatering occurs. The wet sheet is then pressed and further dried on steel dryer cylinders referred to as “Yankee Dryers.” The resultant dried sheet of tissue is then wound onto a roll and wrapped for shipment.

The use of wastepaper as the primary raw material occasionally causes paper making problems when some undesirable materials remain with the deinked pulp. One of these undesirable materials is referred to as “stickies” (essentially adhesive-type contaminants). When stickies cannot be completely removed from the deinked pulp they attach to the paper machine parts, and in large enough quantities make it impossible to produce a quality product. When this situation occurs, a spray solvent wash is applied in conjunction with mechanical action to remove the stickies from the paper machine.

During the paper making process various other chemicals are used throughout the process. These additional chemicals are applied to the deinked stock and to the paper machine as wet strength resins, release aids, retention aids, bactericides, and other functional aids for felt cleaning and conditioning.

Emissions and Air Pollution Control Devices

The emissions from the paper mill process are particulate matter from winding and wrapping operations, combustion products from the air cap heaters, and VOC from producing tissue from the fiber and the process chemicals used. The combustion products associated with the air cap heaters are typical from burning natural gas or back-up propane. Most of the VOC from the process chemicals is the solvent spray. VOC emissions from drying wet tissue and the combustion emissions from the air cap burners are captured by the Yankee dryer hoods and then exhaust through the dryer hood stacks. The other paper mill process emissions are vented from various ventilation fans and open doors and doors in the paper mill building. There are no air pollution control devices for this area.

C. Combustion Units

Both paper machines are equipped with air cap burners which are utilized to assist in drying the wet paper as it passes through the dryer sections. Paper machine #5 has one air cap burner, while paper machine #6 has two. The air cap burners use natural gas (propane as back-up) as their heat source.

Steam to the paper machine dryers and facility heating is supplied by a natural gas fired (propane as back-up) boiler. Water quality chemicals are also added to the boiler on a regular basis for preventative maintenance.

Emissions and Air Pollution Control Devices

The emissions from the boiler are those associated with the combustion of natural gas. There is also a negligible amount of VOC emissions from the boiler feedwater treatment chemicals. VOC from the boiler feedwater treatment chemicals are emitted in negligible amounts primarily at the boiler blowdown tank with even tinier amounts as fugitive emissions from direct steam heating in the process and at steam traps.

Water Treatment

Within the paper making operation there are two internal water clarification loops. The purpose of the water loops is to remove paper filler solids and paper fibers from the water before it is recycled back into the process. Both anionic and cationic polymers are used in these clarification processes.

A secondary pre-treatment wastewater facility is also operated to remove suspended solids from the water before it is returned to the municipal waste treatment facility. Nutrients in the form of aqueous ammonia and phosphoric acid are used in the secondary pre-treatment operation.

Emissions and Air Pollution Control Devices

The emissions from the water treatment process are primarily VOC from the polymers used in the water loop, and a small amount of ammonia from its use as a nutrient in the wastewater plant. The majority of the resultant VOC emissions from the polymers are expected to be emitted at the Dissolved Air Flotation (DAF) units. Both DAF units are inside the fiber preparation building with emissions are reasonably presumed to be vented from the various powered and unpowered exhausts. The wastewater treatment facility is outside so its ammonia emissions are reasonably assumed to be fugitive.

Chlorine dioxide (ClO₂) is added to the clarifier underflow as a biocide to help control odor. ClO₂ is a more powerful biocide than the sodium hypochlorite it replaces. Peroxide is added to sodium chlorate with sulfuric acid to produce about 85 lbs/day of ClO₂. The generator is sealed and the produced ClO₂ is directly injected into the water stream. There are no air emissions.

D. Ancillary Processes

The only significant emissions in this category of miscellaneous facility support areas or items are the storage tank emissions from the solvent spray and aqueous ammonia storage tanks. These emissions result from tank venting and the process of loading and unloading the tanks.

III. EMISSIONS

The following table provides facility-wide totals of various pollutants. This is a facility with potential emission levels of VOC in excess of 100 tpy.

Pollutant	PTE (lbs/hr)	PTE (tpy)
PM-10	2.329	10.2
SO _x	0.087	0.383
NO _x	13.37	58.58
CO	11.23	49.2
VOC	34.23	151.38
Federal HAP's (*)	4.23	18.53
Lead	0.0007	0.0029
Sulfuric Acid Mist	0.0012	0.0054

* Maximum individual HAP- Chloroform at 8.293 tpy

IV. COMPLIANCE

A. Compliance History

Since issuance of its operating permit in 1995, Georgia Pacific Tissue has been inspected by the Arizona Department of Environmental Quality (ADEQ) three times - January 25, 1996, December 4, 1996, and July 23, 1997. All inspections were routine and no findings or citations were issued. There have been no documented complaints against the facility.

B. Compliance Certifications and Compliance Plan

Georgia Pacific Tissue has included a compliance certification signed by the responsible official certifying that the statements contained in the application are

true, accurate, and complete.

Georgia Pacific Tissue has specified in Section 17 of the permit application that it operates all emission units in compliance with applicable requirements and will continue to comply with all applicable requirements under the existing operating permit. In addition, Georgia Pacific Tissue will comply with all applicable requirements that become effective during the permit term on a timely basis.

V. APPLICABLE REGULATIONS

Table 5-1: Fiber Prep Operations

Source No.	Process Description	Control Equipment	Year of Manufacture /Installation	Applicable Regulations
1-2-1	No. 1 Pulper	None	1986	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
1-2-2	No. 2 Pulper	None	1970	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
1-2-3	No. 3 Pulper	None	1999	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
1-4-1	No. 1 Flotation Cell	None	1990	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
1-5-1	Washers	None	1990	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources

Table 5-2: Paper Mill

Source No.	Process Description	Control Equipment	Year of Manufacture /Installation	Applicable Regulations
2-1-2	Blend Chest #5	None	unknown	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
2-1-5	Blend Chest #6	None	unknown	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
2-2-3	Wire & Felt Section #5	None	1963	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources

Source No.	Process Description	Control Equipment	Year of Manufacture /Installation	Applicable Regulations
2-2-4	Yankee Dryer #5	None	1986	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
2-2-5	Reel #5	None	1963	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
2-3-3	Wire & Felt Section #6	None	1990	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
2-3-4	Yankee Dryer #6	None	1963	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
2-3-5	Reel #6	None	1963	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources

Table 5-3: Combustion Units

Source No.	Process Description	Control Equipment	Start-up Date	Applicable Regulations
3-1-1	Paper Machine #5 Air Cap Burner	None	1995	Arizona Administrative Code (AAC) R18-2-730.A- Standards of Performance for Unclassified Sources
3-2-1	Paper Machine #6 Air Cap Burner No. 1	None	1997	Arizona Administrative Code (AAC) R18-2-730.A- Standards of Performance for Unclassified Sources
3-3-1	Paper Machine #6 Air Cap Burner No. 2	None	1997	Arizona Administrative Code (AAC) R18-2-730.A- Standards of Performance for Unclassified Sources
3-4-1	Cleaver Brooks Boiler	None	1998	40 CFR 60.40c, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Table 5-4: Water Treatment

Source No.	Process Description	Control Equipment	Start-up Date	Applicable Regulations
4-1-2	Settling Clarifier	None	unknown	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources

Source No.	Process Description	Control Equipment	Start-up Date	Applicable Regulations
4-2-1	DAF Units	None	1986	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
4-2-3	Sludge Press	None	1990	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources

Table 5-5: Ancillary Processes

Source No.	Process Description	Control Equipment	Start-up Date	Applicable Regulations
5-1-1	Solvent Storage Tank	None	unknown	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources
5-1-8	Ammonia Tank	None	unknown	Arizona Administrative Code (AAC) R18-2-730.A, B, D, F, and G- Standards of Performance for Unclassified Sources

VI. PREVIOUS PERMITS AND CONDITIONS

Table 6: Previous Permits

Permit No.	Issue Date	Application Basis
1001192	12/27/99	Transfer of Operating Permit to Georgia Pacific Tissue, LLC
100184	6/12/95	Transfer of Operating Permit to Wisconsin Tissue
1000724	8/24/98	Minor Permit Revision to replace boiler
1000913	1/13/99	Minor Permit Revision to install third pulper

Table 7: 1000184

Permit condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
Att A			x		Latest version of Att A will be built into the permit.
Att B.I			x		Applicable requirements for individual fuel burning equipment will be presented in the permit (NSPS or state requirements)
Att B.II.A			x		The particulate matter standard will apply only for those fuel burning equipment that are subject to the state rules.

Permit condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
Att B.II.B			x		Fuel burning equipment, subject to the state rules, will be subject to an opacity standard of 40%.
Att B.III			x		Permittee will have the option of burning natural gas and propane in the fuel burning equipment

Table 8- Permit # 1000724

Permit condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
Att B.I.A	x				Requirements for the temporary boiler
Att B.I.B	x				Requirement to operate the Cleaver Brooks boiler in accordance with manufacturer and vendor specifications
Att B.II.A			x		Permittee will have the option of burning natural gas and propane in the three Maxon burners
Att B.II.B		x			Option to burn natural gas and propane in the Cleaver Brooks boiler
Att B.III.A	x				Start-up notification for the boilers
Att B.III.B		x			Recordkeeping requirement for the daily fuel usage
Att B.III.C		x			Requirement to recordkeep for 5 years

Table 9- Permit # 1000913

Permit condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
Att B.I		x			Installation and operation of a third pulper
Att B.II		x			Authorization to operate two paper machines and three pulpers
Att B.III		x			Odor requirements for the pulper
Att B.IV			x		Storage and processing requirements for solvents out of R18-2-730.

VII. PERIODIC MONITORING REQUIREMENTS

A. PM and opacity monitoring

1. By way of engineering calculations, it can be reasonably presumed that particulate emissions from process sources will be very minimal and well below the applicable emission limitation. Consequently, no specific monitoring plan is set up for the process sources in the facility. Storage and raw material handling areas and traffic within the facility are expected to be minimal sources of air emissions and are not being subject to periodic monitoring requirements.
2. Fuel burning equipment in the facility will be fired with natural gas or propane. Opacity and PM violations are not anticipated with the burning of these fuels. Consequently, no specific monitoring plan is specified for these equipment.

B. Solvent Usage Monitoring

The facility wide PTE total for VOC's is 151.38 tpy. This VOC emission estimate is based on conservative material balance calculations where all of the VOC components in the solvents are expected to be released into the atmosphere. However, since the emission value is close related to the type and quantity of solvents used, monitoring of solvent usage has been required in the permit.

Permittee is required to monitor solvent usage on a daily basis on weekdays and pro-rate weekend usage. At the end of every month, Permittee is required to update monthly and rolling twelve month totals of solvent usage and associated VOC emissions. At the time that the semi-annual compliance certifications are due, Permittee is required to submit reports of the twelve month totals of solvent usage and VOC emission estimates corresponding to that solvent usage.

C. Hypochlorite Usage Monitoring

The potential to emit for chloroform is 8.293 tpy; facility-wide chloroform emissions are a sum total of emissions from multiple emission units. However, majority of the emissions (~ 6 tpy) occur at the three pulpers and the washer/mill chest with the usage of sodium hypochlorite. A limit of 584,000 gallons of hypochlorite usage is set in the permit to limit facility-wide emissions of chloroform below major source levels of 10 tpy.

Permittee is required to monitor hypochlorite usage on a daily basis on weekdays and pro-rate weekend usage. At the end of every month, Permittee is required to update

monthly and rolling twelve month totals of hypochlorite usage and facility wide chloroform emissions. At the time that the semi-annual compliance certifications are due, Permittee is required to submit reports of the twelve month totals of hypochlorite usage and chloroform emission estimates.

VIII. TESTING REQUIREMENTS

The uncontrolled particulate matter emissions from the process sources in the facility are expected to be a fraction of the allowable. So, performance testing for PM is not required for any of them.

IX. INSIGNIFICANT ACTIVITIES

The following activities are deemed to be “insignificant” based on the definition of insignificant activity in R18-2-101.54.

- A. Plant maintenance and upkeep activities,
- B. Hand-held or manually operated equipment employed in the company’s in-house tool shop,
- C. Laboratory equipment and activities,
- D. Handling and storage of waste paper, and
- E. Office and administrative activities.